

Remarks/Arguments**Office Action Summary****Status.**

1. This *RESPONSE C* is in answer to the Office communication of 09/03/2008.
2. The Office communication is non-final.
3. NA

Disposition of Claims.

4. Claims 1 - 42 are pending in the application.
5. Claims 16 - 42 have been allowed.
6. Claims 1 - 15 stand rejected.
7. NA
8. NA

Application Papers.

9. NA
10. NA
11. NA

Priority under 35 U.S.C. § 119.

12. NA

DETAILED ACTION

Claim Rejections - 35 USC § 103 (a)

0. The quotation of 35 USC § 103 (a) is noted.
1. Claims 1-5, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al (US 20040062298) in view of Henriksson (US 20040037353) and in further view of Monsen (US 7,088,671). This rejection is respectfully traversed for the following reasons.

1.1 Summary Of Argument

- 1.1.1. The present invention relates to generating and transmitting *agile frequency test signals to test radios*. As described in the specification, *agile frequency test signals* are signals that have rapidly changing frequency and time characteristics extending over the range of the *test radio* so as to test the *test radio*.
- 1.1.2. None of the references cited by the Examiner transmit an *agile frequency test signal to a test radio*.
- 1.1.3. In the prior 09/19/2007 Office Action, the Examiner failed to identify any “generator” of any test signal or any “transmitter” of any test signal. In order to attempt to overcome this fatal deficiency of the prior 09/19/2007 Office Action, the Examiner in the present 09/03/2008 Office Action adds the Monsen (US 7,088,671) patent which depicts an in-channel generator and transmitter, but the generator and transmitter of the Monsen (US 7,088,671) patent are clearly not suitable for *agile frequency test signals* and *test radios*.
- 1.1.4. The generator and a transmitter of the Monsen (US 7,088,671) patent cannot generate and cannot transmit an *agile frequency test signal* but must operate with an in-channel signal. If the Monsen (US 7,088,671) patent transmitted an *agile frequency test signal* capable of testing a *test radio*, the test signal would spill over into other channels and hence the operation of the Monsen (US 7,088,671) patent would be destroyed. Anyone

with even less than ordinary skill in the art would recognize that using an *agile frequency test signal* in the Monsen (US 7,088,671) patent would render the Monsen (US 7,088,671) patent system inoperable.

1.1.5. The Examiner has not found any reference that can perform the function of the present invention, that is, the function of testing radios with an *agile frequency test signal*. Rather, the Examiner, by way of hindsight after reading applicants' specification and claims, has picked bits and pieces of different prior art references and artificially combined them in a manner that would not be considered reasonable by those skilled in the art.

1.1.6. Upon reconsideration, it is believed that the Examiner will find all claims in the application allowable.

1.2. **Claim 1 Rejection.** In making the rejection of paragraph 1 above, the Examiner argues in the present 09/03/2008 Office Action as follows (with numbering added for ease of reference and with changes relative to the Examiner's argument in the prior 09/19/2007 Office Action indicated with deletions shown by strike-through and additions shown by underline):

- 1.2.1. *As to claim 1, McDonough teaches a system including ~~a generator~~ for detecting direct sequence signal where the radio signal has specifications for operating in a communications system comprising,*
- 1.2.2. *a signal component source (see fig. 3, number 317, paragraphs 0041-0046) for providing signal components including parameters and including a sequence and symbols derived from radio transmissions of the communications system,*
- 1.2.3. *a signal generator (see fig. 3, number 321, paragraphs 0041- 0046) for digitally processing the sequence, the test symbols and test parameters to form an agile test signal,*
- 1.2.4. *~~a transmitter for transmitting the test signal to the test radio (see paragraphs 0041-0046);~~*
- 1.2.5. *McDonough fails to teach wherein the system is a testing system.*
- 1.2.6. *Henriksson teaches a testing sytem (sic) for testing a transmitter and receiver part in a transceiver (see fig. 2, number 200, paragraphs 0021-0023).*
- 1.2.7. *Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Henriksson into the system of*

McDonough so that the testing system can be easily integrated and increase the cost saving.

- 1.2.8. *The combination of McDonough and Henriksson fails to teach wherein the system includes the generator and a transmitter for transmitting the test signal to the test.*
- 1.2.9. *Monsen teaches wherein the system includes the generator and a transmitter for transmitting the test signal to the test (see col. 7, lines 34-51).*
- 1.2.10. *Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Monsen into the system of McDonough and Heriksson (sic) to provide a downlink multiple access communication system with increased channel capacity and improved communication quality.*

1.3. **Comments As To Section 1.2.1.** Applicants' Claim 1 is for "A test system *including a generator* for generating an agile frequency test signal...". The Examiner now admits that McDonough does not teach a ***generator*** (see deletion of "generator" in Section 1.2.1 above and Section 1.2.8). McDonough does not extract signal components from a received signal. McDonough only compares the received signal against possible matching signals to find the matched signal. Henriksson does not extract signal components from the received signal. Henriksson only frequency translates and attenuates the received signal.

1.4. **Comments As To Section 1.2.3.** The Examiner's argument supporting the rejection, as quoted in Section 1.2.3 above, is in error. No where does McDonough describe or suggest a "*a signal generator for digitally processing the sequence, the test symbols and test parameters to form an agile test signal*". McDonough is only concerned with analysis of received signals and not with generating any test signals. Although the Examiner has apparently admitted that McDonough has no generator (see deletion of "generator" in paragraph 1.2.1 above and admission of Section 1.2.8) the Examiner still argues in Section 1.2.3 that McDonough has a generator.

1.5. **Comments As To Section 1.2.4.** The Examiner now admits, by the deletion of "transmitter" in Section 1.2.4 above, that the prior 09/19/2007 Office Action was in error. No where does McDonough describe or suggest "*a transmitter for transmitting the test signal to the test radio*". McDonough is only concerned with analysis of received signals and not with transmission of test signals.

- 1.6. **Comments As To Section 1.2.5.** The Examiner's admission that "*McDonough fails to teach wherein the system is a testing system*" is noted. This admission, of course, is an admission that McDonough does not have either the agile signal *transmitter* or the agile signal *generator* both of which are positively recited elements in Applicants' Claim 1.
- 1.7. **Comments As To Section 1.2.6.** The Examiner argues that *Henriksson teaches a testing system (sic) for testing a transmitter and receiver part in a transceiver*. While Henriksson describes a testing system, Henriksson does not teach a "signal generator" that operates "to form an agile test signal" as required by Applicants' claim 1. The test signal in Henriksson is only the untransmitted signal. Henriksson does not extract signal components including test parameters and including a test sequence and test symbols as required by Applicants' Claim 1.
- 1.8. **Comments As To Section 1.2.7.** The Examiner argues that it would be obvious "*to provide the teaching of Henriksson into the system of McDonough*". This conclusion is believed to be unfounded for the following reasons.
- 1.8.1. **First**, even if Henriksson were incorporated somehow into the system of McDonough, such incorporation would not teach Applicants' invention. Applicants' Claim 1, for example, requires both generation of an agile test signal for transmission and a transmitter for transmitting the agile test signal. As discussed above in detail, neither McDonough nor Henriksson generates an agile test signal.
- 1.8.2. **Second**, the Examiner argues that it would be obvious *to provide the teaching of Henriksson into the system of McDonough so that the testing system can be easily integrated and increase the cost saving*. However, such introduction of Henriksson into McDonough would neither be easily integrated nor increase any cost saving. The Examiner cites neither reasoning nor other justification supporting such conclusions of easy integration or cost savings. The Henriksson system is the only one of the two systems that is a testing system. The Examiner has admitted that McDonough is not a testing system. Henriksson relies upon a very simple test signal, that is, the transmitter signal of the transceiver is hardwired directly to the receiver for testing. If the complexity of McDonough were combined with the test system of Henriksson, then the

test system would be far more complex and expensive, contrary to the Examiner's conclusion of cost saving. Furthermore, it is not apparent how a workable system would result from the combination of McDonough and Henriksson. Each system has a different purpose and function and the modification of one to work with the other would necessarily destroy the intended function of one or the other or both systems.

1.8.3. **Third.** While the above arguments of Sections 1.8.1 and 1.8.2 were presented in Applicants' prior RESPONSE B, the Examiner has offered no reasoning or support of any kind as to why the McDonough and Henriksson references can be combined in the manner suggested by the Examiner.

1.9 Comments As To Section 1.2.8.

1.9.1. The Examiner now argues that Monsen teaches a system that includes a generator and a transmitter for transmitting test signals and refers to Monsen (col. 7, lines 34-51) as follows:

In some systems, a reference generator may produce a sequence of known data symbols that is multiplexed in each frame of digital data. Examples of reference data sequences include a maximum length pseudo-noise (PN) sequence with length equal to the number of reference symbols to be inserted, or alternatively each reference subburst in a frame may be a portion of a very long PN sequence. The reference data can be used at the user terminal receiver for estimation of channel parameters required in demodulation of the user signal. Alternately separate test signals can be used in a downlink system for parameter estimation at the user terminal receivers. Received reference data or received test signals may also be quantized and retransmitted on an uplink transmission to the central node. At the central node correlation of downlink received reference data or test signals with originally transmitted signals will produce downlink cross signal transmittance values required for precoding operations for the next downlink transmission.

1.9.2. The Examiner is correct in that Monsen includes a generator and a transmitter. However, the Monsen generator and transmitter are for in-channel communications that have no capacity for testing a test radio. The signal required in applicants' claims is "an

agile frequency test signal for testing a test radio". A test radio cannot be tested by an in-channel "test signal" of the type contemplated in Monsen. Monsen only provides tests for the in-channel communications and provides nothing of value for testing a test radio.

- 1.10. In conclusion regarding Claim 1, none of McDonough, Henriksson and Monsen describe alone or in combination any *agile test signals*; or how they are formed, generated or transmitted for testing a *test radio*. McDonough is only concerned with received signals and how to process the received signals. McDonough makes no suggestion that anything related to the processing of the received signals would be useful in forming signals to be transmitted for testing a radio. Neither McDonough nor Henriksson has any suggestion of "signal components including test parameters and including a test sequence and test symbols" or any signal generator for digitally processing the test sequence, the test symbols and test parameters to form an agile test signal for testing a test radio. Monsen cannot operate with an agile test signal for testing a test radio. The Examiner's combination of McDonough and Henriksson does not have the positively recited elements of Applicants' Claim 1. Even if McDonough and Henriksson could be combined as suggested by the Examiner, that combination still cannot be combined with Monsen for any useful purpose since Monsen is limited to in-channel test signals not suitable for testing a test radio. None of the references, alone or in any combination, provide "an agile test signal for testing a test radio".

- 1.11. **Claims 2, 3 Rejection.** In making the rejection, the Examiner argues as follows:

As to claims 2, 3, the combination of McDonough, Henriksson and Monsen teaches wherein the test system extracts the signal components from the transmission of a transmitting radio for the communications system; wherein the transmitting radio is the test radio (see McDonough paragraph 0041)

- 1.11.1. The Examiner's argument supporting the rejection, as quoted in Section 1.11 above, is in error. Nothing in McDonough teaches how or what signals are to be generated in the "transmitting radio" in McDonough. The Examiner has reversed the roles of the

transmitter radio and receiver radio in McDonough. In Applicants' claimed invention, the test radio must be a radio receiving the "agile test signal".

1.11.2. The Examiner argues as quoted in Section 1.11 that the "test radio" is the radio transmitting the "test" signal. If as argued by the Examiner, the test radio is the transmitting radio, then the "test" radio in McDonough never receives the agile test signal and the "test" radio in McDonough therefore cannot be tested. Furthermore, there still is nothing in McDonough that generates or transmits agile test signals as required by Applicants' claims. Furthermore, nothing in Henriksson suggests transmitting an agile test signal. Monsen cannot transmit an agile test signal and only transmits in-channel test signals.

1.11.3. Applicants' dependent Claim 3 recites that "the transmitting radio is the test radio". While the transmitting radio can be the test radio per Claim 3, such condition does not remove the requirement per Claim 1 that the test radio must also receive the agile test signal. Such a relationship is shown in Applicants' FIG 2 where the radio 102 both transmits and receives. By way of distinction, nothing in McDonough or in Henriksson shows or suggests a test radio that receives an "agile test signal". The McDonough paragraph 0041 describes no details whatsoever about the transmitted signal. The Examiner's argument as quoted in Section 1.11 above that "*the transmitting radio is the test radio*" does not address the requirement of Applicants' Claim 1 that the test radio must receive the agile test signal. In addition to a receiver of the test signal, a generator and transmitter for transmitting the agile test signal also must be present as required by Applicants' claims, but none is present in McDonough or in Henriksson. Monsen cannot transmit an agile test signal and only transmits in-channel test signals.

1.12. **Claims 4 Rejection.** In making the rejection, the Examiner argues as follows (with numbering added for ease of reference):

1.12.1. *As to claim 4, the combination of McDonough, Henriksson and Monsen teaches*

1.12.1.1. *wherein the transmitting radio is different from the test radio and*

1.12.1.2. *wherein the test radio has the same specifications as the test radio (see McDonough paragraph 0088).*

1.12.2. Nothing in McDonough and Henriksson supports the Examiner's argument quoted in Section 1.12.1.1 above "*wherein the transmitting radio is different from the test radio*". Specifically, paragraph [0088] cited by the Examiner has been studied carefully and nothing can be found in that paragraph that supports the Examiner's argument. The paragraph [0088] does not discuss a transmitting radio and a test radio. Similarly, the Examiner's argument quoted in Section 1.12.1.2 above is not supported by McDonough and Henriksson. Specifically, paragraph [0088] cited by the Examiner has been studied carefully and paragraph [0088] does not discuss a transmitting radio and a test radio, nor is there any discussion of specifications that may be the same or different for two radios. Monsen cannot transmit an agile test signal and only transmits in-channel test signals.

1.13. **Claims 5 Rejection.** In making the rejection, the Examiner argues as follows:

As to claim 5, the combination of McDonough, Henriksson and Monsen teaches wherein the component source includes a memory for storing digital values of the signal components (see McDonough fig. 7, number 730, paragraph 0088).

1.13.1. The Examiner's arguments are not supported by the references. The Examiner states, as quoted in Section 1.13, that McDonough includes a memory 730. However, paragraph [0090] of McDonough that refers to memory 730 does not describe any function other than storage for that memory. Paragraph [0088] cited by the Examiner makes no reference to any memory. Therefore, the Examiner's conclusion that

McDonough teaches anything about *storing digital values of the signal components* is not supported by McDonough.

1.14. **Claims 10, 11 Rejection.** In making the rejection, the Examiner argues as follows:

As to claims 10, 11, the combination of McDonough, Henriksson and Monsen teaches where the test radio is monitored to determine performance in response to the agile test signal; where the test signal is transmitted by a transmit antenna to a receive antenna of the test radio (see fig. 7, number 705, paragraph 0088).

1.14.1. The Examiner's argument supporting the rejection, as quoted in Section 1.14 above, is in error. Nothing in the references teaches monitoring the test radio in response to an agile test signal. In FIG 7 of McDonough, a receiver radio is shown with a receiver antenna 705. All of the processing in McDonough occurs upon the received signal such as the signal from antenna 705. The received signal in McDonough is not used to generate any agile test signal for transmission to a test radio as required by Applicants' Claim 1. The Examiner argues that FIG 7 of McDonough is the test radio, and if this assertion is true, nonetheless nowhere in McDonough is there any description of generation of an agile test signal for transmission to that test radio of FIG 7 of McDonough. Applicants' Claim 1, for example, requires such generation and transmission of an agile test signal. Henriksson does not teach generation of an agile test signal for transmission to the test radio. Monsen cannot transmit an agile test signal and only transmits in-channel test signals.

2. **Claims 6-9, 12-15 Rejection.** In making the rejection, the Examiner argues as follows (with numbering added for ease of reference):

Claims 6-9, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al (US 20040062298) in view of Henriksson (US 20040037353), Monsen (US 7,088,671) further in view of Taki et al (US 20040070490).

2.1. **Claims 6,7** With regard to Claims 6 and 7, the Examiner argues:

2.1.1. *As to claims 6, 7, the combination of McDonough, Henriksson and Monsen fails to teach wherein the test sequence is a hopping sequence and the test radio is a frequency*

hopping radio; wherein signal hop frequencies and message symbols are extracted from the transmission of a transmitting radio for the communications system.

2.1.2. *Taki teaches wherein the test sequence is a hopping sequence and the test radio is a frequency hopping radio (see fig. 3, paragraphs 0076-0077, 0084-0086); wherein signal hop frequencies and message symbols are extracted from the transmission of a transmitting radio for the communications system (see fig. 3, paragraphs 0076-0077, 0084-0086).*

2.1.3. *Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Taki into the system of McDonough, Henriksson and Monsen in order to obtain the original information signal.*

2.2. The Examiner is correct in the Office action quote of Section 1.15.1 above as to the things that McDonough, Henriksson and Monsen fail to teach. Further, as discussed above, McDonough, Henriksson and Monsen fail to teach generation of an agile test signal or the transmission of an agile test signal to a test radio.

2.3. The Examiner is in error in arguing as quoted in Section 1.15.1.2 above that *Taki teaches wherein the test sequence is a hopping sequence and the test radio is a frequency hopping radio*. Nothing in Taki suggests anything about a test system, about a test sequence or about a test radio. The Examiner has not identified anything in Taki that relates to testing in any manner or form. Although Taki describes a frequency hopping system, Taki does not describe a test system.

2.4. Since McDonough, Henriksson and Monsen fail to teach generation of an agile test signal or the transmission of an agile test signal to a test radio and since Taki does not describe anything relating to testing, the combination of McDonough, Henriksson, Monsen and Taki similarly fails to teach generation and transmission of an agile test signal to a test radio as required by Applicants' Claim 1, for example.

2.5. To the extent in Section 1.15.1.3 above that there is any relevance to Applicants' claims, the Examiner is in error in arguing as quoted that it would have been obvious *to provide the teaching of Taki into the system of McDonough, Henriksson and Monsen in order to obtain the original information signal*. Taki is a frequency hopping system and McDonough, Henriksson and Monsen are not frequency hopping systems and it is not apparent how they can

be made to work together. There is no suggestion by the Examiner or in any of the references as to why such a combination should be made or if to be made how it would work. The Examiner seems to have picked some arbitrary frequency hopping system (Taki) having nothing to do with testing and combined it with McDonough, Henriksson and Monsen for no justifiable purpose or technical reason. Certainly one skilled in the art would find no reason to make such a combination.

2.6. **Claims 8, 9** With regard to Claims 8 and 9, the Examiner argues:

As to claims 8, 9, the combination of McDonough, Henriksson, Monsen and Taki teaches where the test signal is generated as an analog signal with a digital to analog converter (see Taki fig. 3, number 30, paragraphs 0076-0077, 0084-0086); where the analog signal is up-converted to a higher frequency for transmission to the test radio (see Taki fig. 3, number 30, paragraphs 0076-0077, 0084-0086).

2.6.1. For the reasons explained above, the combination of McDonough, Henriksson, Monsen and Taki fails to teach generation and transmission of an agile test signal to a test radio as required by Applicants' Claim 1 regardless of whether in digital or analog form.

2.7. **Claim 12.** With regard to Claim 12, the Examiner argues:

As to claim 12, the combination of McDonough, Henriksson, Monsen and Taki teaches where the test signal is transmitted by a transmit wired connection to a receive wired connection of the test radio (see McDonough paragraph 004 1-0046).

2.8. For the reasons explained above, the combination of McDonough, Henriksson, Monsen and Taki fails to teach transmission of an agile test signal to a test radio as required by Applicants' Claim 1 regardless of whether or not a wired connection is used.

2.8.1. **Claims 13, 14** With regard to Claims 13 and 14, the Examiner argues:

As to claims 13, 14, the combination of McDonough, Henriksson, Monsen and Taki teaches where interference signals are added to the test signal; where noise is added to the test signal (see McDonough paragraphs 0088).

2.8.2. The Examiner's argument supporting the rejection, as quoted in Section 1.15.10 above, is in error. In paragraph [0088], interference and noise are **removed** from the received signal whereas Applicants' claims require that interference (see Applicants' Claim 13) and noise (see Applicants' Claim 14) be **added** to the transmitted signal. The operation in McDonough of removing noise and interference from a received signal is conventional in order to be able to better process the received signal. However, adding noise and interference to a test signal to be transmitted is not conventional and is not suggested in any way by McDonough alone or in view of Henriksson, Monsen and/or Taki.

2.8.3. **Claim 15**. With regard to Claim 15, the Examiner argues

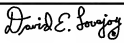
As to claim 15, the combination of McDonough, Henriksson, Monsen and Taki teaches where a signal amplitude of the test signal is faded (see Taki paragraph 0086)

2.8.4. The Examiner's argument supporting the rejection, as quoted in Section 1.15.12 above, is in error. Nothing in Taki paragraph 0086 appears to be related to reduced amplitude. Applicants believe the Examiner may be referring to Taki paragraph 0085 which describes the reduced amplitudes of the reflected signals. If this is the Examiner's intent to apply Taki paragraph 0085, then the Examiner is still in error for the following reasons. For the reasons explained above, the combination of McDonough, Henriksson, Monsen and Taki fails to teach transmission of an agile test signal to a test radio as required by Applicants' Claim 1. Since there is no agile test signal, the fact that some other signal has a reduced amplitude does not suggest in anyway fading the amplitude of an agile test signal.

Allowable Subject Matter

3. The allowance of Claims 16-42 is noted.

Respectfully submitted,

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